

ALASKA SABLEFISH FISHERY, 1986

by

Richard K. Kinoshita

Resource Ecology and Fisheries Management Division
Northwest and Alaska Fisheries Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
7600 Sand Point Way N.E.
BIN C15700
Seattle, WA 98115-0070

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ABSTRACT

The sablefish or black cod Anohlopoma fimbria, fishery off California, Oregon, Washington, and Alaska has gone through three distinct development phases since the late 1800's. This report briefly discusses these phases and describes in more detail the 1986 fishery with an emphasis on the fishery off Alaska.

In 1986, the 39,736 metric ton, \$47.9 million sablefish harvest in the wholly domestic fisheries accounted for 98.5% of the domestic, joint venture, and foreign sablefish catch off the United States and **41%** of the ex-vessel value of all groundfish (excluding halibut) taken in wholly domestic commercial fisheries off California, Oregon, Washington, and Alaska. Between **1985** and 1986 the catch by weight and ex-vessel value increased by 37% and 50%, respectively, for the four states; The corresponding increases for Alaska alone were 80% and 82%. Despite a 48% increase in the number of fishing vessels landing sablefish in the Alaska fishery, there was a 22% increase in catch per vessel. Catch per vessel in 1986 compared to 1985 increased for longliners and for trawlers, but declined for vessels utilizing pots. Sablefish exports increased by 67% in weight and by 63% in value.

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INTRODUCTION

The fishery for sablefish, Anoplopoma fimbria, in the North Pacific Ocean has been characterized by three distinct phases of exploitation. The first two phases were described by Low, et al. (1976) as follows:

Sablefish have been utilized in the United States and Canada for nearly a century. It is one of the oldest fisheries on the Pacific Coast, having begun in the late 19th Century off Washington and British Columbia (Phillips 1958). Prior to **1958**, the U.S. and Canada carried out the only significant fishery on the resource with annual catches ranging from 2,000 to 9,500 mt (4.4 to 21.0 million lb). Now, the resource is fished directly and indirectly by nine countries along the continental shelf and slope of the Bering Sea and northeastern Pacific Ocean. Annual catches increased to a peak of 65,400 mt (144.2 million lb) in 1972 and declined to about 44,300 mt (97.7 million lb) in 1974, with Japan accounting for nearly 77 percent of the 1974 catch.

The third phase is characterized by the growth of the domestic fishery and the elimination of the foreign target fishery in waters off the United States (Table 1). The domestic sablefish fishery grew rapidly--at first in response to increased catch per unit of effort, ex-vessel price and decreased sablefish allocations to foreign fleets, and later also in response to increased quotas. By 1986, foreign fleets were only permitted to harvest sablefish as by-catch while targeting on other groundfish species, and in the Gulf of Alaska sablefish became a prohibited species for foreign fleets.

This report reviews the sablefish fishery in 1986 with an emphasis on the Alaska fishery. Preliminary catch data for 1985 and 1986 were used in this report and are subject to revision.

1986 CATCH OFF THE UNITED STATES

The sablefish catch off the United States in 1986 totaled 40,334 metric tons (t) or 89 million pounds, up 36% from 1985. The domestic fishery

Table 1 .--Annual catch of sablefish in U.S. waters, 1981-86
(in metric tons, round weight).

Year	Domestic	Joint venture	Foreign	Total
1981	13, 349	212	11, 046	24, 607
1982	21, 663	137	9, 516	31, 316
1983	18, 390	395	8, 144	26, 929
1984	24, 019	880	3, 030	27, 929
1985	28, 975	336	374	29, 685
1986*	39, 736	482	116	40, 334

*Includes prohibited species catch in the Gulf of Alaska
that was discarded.

Source: **Data** from NMFS office of the Pacific Marine Fisheries
Commission, Pacific Fishery Information Network, 7600
Sand Point Way N.E., BIN C15700, Seattle, WA **98115-0070**.

accounted for 98.5% of the catch with 1.2% harvested by joint ventures and 0.3% by foreign fleets. The domestic sablefish catch in 1986 was 39,736 t valued at \$47.9 million compared to 28,975 t worth \$31.9 million in **1985** (Table 2). While the catch was 37% above a year ago, the value increased by 50% as average ex-vessel prices improved to 54.7 cents per pound, round weight, up 9% from 1985. These increases occurred despite decreases in the sablefish catch off both Oregon and Washington. In 1986, sablefish accounted for approximately **41%** of the ex-vessel value of all groundfish (excluding halibut) harvested by the domestic fisheries off California, Oregon, Washington, and Alaska.

Domestic Fishery off Alaska

Catch, Quotas, and Seasons

Alaska domestic fishery landings amounted to 26,534 t in 1986, 80% above the 14,733 t landed in 1985. Table 3 presents the Alaska sablefish quotas, catch, and date of closure by North Pacific Fishery Management Council regulatory area and gear. Quotas are established by the North Pacific Fishery Management Council with the Alaska Region of the National Marine Fisheries Service monitoring the fishery and setting closure dates when target quotas are being approached. The longline fishery in the Gulf of Alaska opened on 1 April, together with the pot fishery in the Central and Western Regulatory Areas of the gulf (Figure 1). After only 2-1/2 weeks, longline quotas were reached in the Southeast and East Yakutat districts and the longline fishery, was closed in these districts. West Yakutat was closed on 10 May followed by the closure of the Central Regulatory Area on 26 May. In most cases, intensive fishing led to catches beyond established quotas.

Table 2.--Pacific Coast catch of sablefish, 1985-86 (quantity in metric tons, round weight, and value in 1,000 dollars).

Fishery	1985		1986*	
	Quantity	Value	Quantity	Value
California	5, 128	2, 872	6, 099	4, 563
Oregon	5, 275	3, 424	4, 668	3, 617
Washington	<u>3, 839</u>	<u>6, 165</u>	<u>2, 435</u>	<u>4, 232</u>
Subtotal	14, 242	12, 461	13, 202	12, 412
Alaska	<u>14, 733</u>	<u>19, 479</u>	<u>26, 534</u>	<u>35, 475</u>
Subtotal	28, 975	31, 940	39, 736	47, 887
Joint ventures	336	na	482	na
Foreign	<u>374</u>	na	<u>116</u>	na
Grand total	29, 685	na	40, 334	na

*Preliminary na= not available.

Source: NMFS office of the Pacific Marine Fisheries Commission, Pacific Fishery Information Network, 7600 Sand Point Way N.E., BIN C15700, Seattle, WA **98115-0070**.

Table 3.--Quota and catch of Alaska domestic sablefish fishery
by North Pacific Fishery Management Council regulatory
area and gear, 1986 (in metric tons, round weight).

Area and gear	Quota	Catch*	Closure
Gulf of Alaska			
Eastern			
Longline			
S.E. & E. Yakutat	3,278	3,515	17 April
West Yakutat	2,422	3,059	10 May
Trawl	300	765	17 September
Central			
Longline	3,383	5,100	26 May
Trawl	1,230	1,764	26 April
Pot	1,537	1,193	
Western			
Longline	1,568	1,794	3 July
Trawl	695	695	7 October
Pot	712	787	9 June
Bering Sea	2,667	2,734	10 July
Aleutian Islands	<u>4,329</u>	<u>3,052</u>	
Total	22,121	24,458	

*Preliminary. Does not include catch from state waters.

Source: Fisheries Management Operations Branch, NMFS, 709
W. Ninth St., P.O. Box 1668, Juneau, AK 99802.

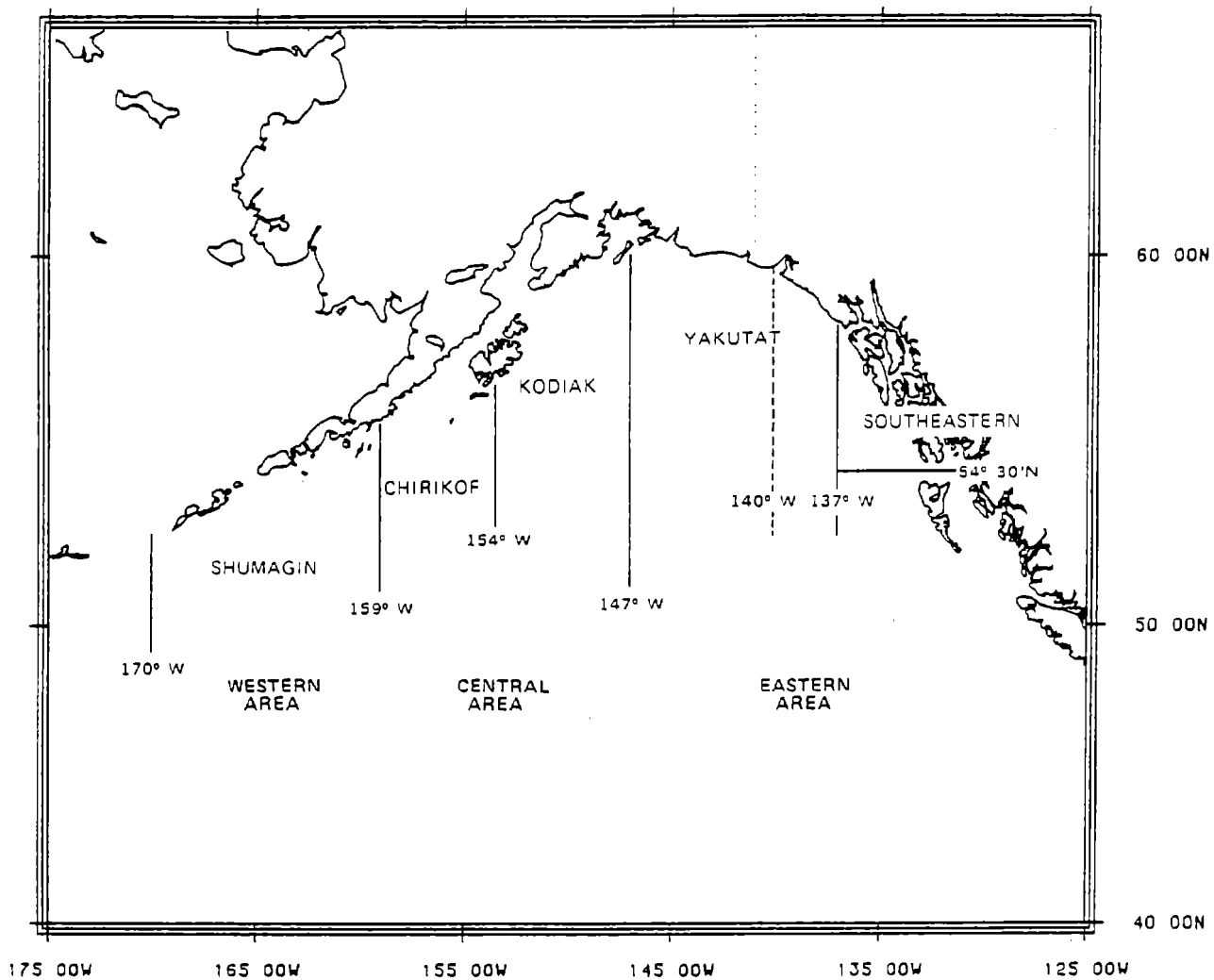


Figure 1. --Gulf of Alaska: International North Pacific Fisheries Commission (INPFC) statistical areas (Shumagin, Chirikof, Kodiak, Yakutat, and Southeastern) and North Pacific Fishery Management Council regulatory areas (Western, Central, and Eastern). The INPFC Yakutat Area is divided at 140° W. long.

Of the total 26,534 t domestic harvest off Alaska in 1986, 68.7% was caught by longline gear, while pot and trawl vessels landed 12.7% and **18.6%** respectively, (Table 4). Catch by each gear type was higher than in 1985 with the largest percentage increase by trawls. Sablefish is the principal groundfish species taken with longline and pot gear, accounting for 89% and 92.7%, respectively, of the 1986 groundfish taken with each of these types of gear. Pacific cod (Gadus macrocephalus) and walleye pollock (Theragra chalcogramma) were the principal groundfish taken with trawl gear with sablefish accounting for only 4% of the catch in 1986 (Appendix Table 5).

Ex-vessel Value and Prices

The ex-vessel value of sablefish increased more than the catch because the average ex-vessel price was up slightly from 59.7 cents per pound, round weight in 1985 to 60.6 cents per pound in **1986** (Appendix Table 2). Compared to 1985, the average ex-vessel price increased by 31% for pot gear and 4% for longline gear but decreased by 3% for trawl gear. A change in the catch composition limited the overall increase to 1.5%. The 713% increase in lower priced trawl-caught fish accounted for 18.6% of the catch in 1986 compared to only 4% in 1985.

Number of Vessels and Catch per Vessel

There were a total of 570 vessels landing sablefish in 1986, a 48% increase over **1985** with a 22% increase in overall catch per vessel. Average catch and revenue per vessel differed substantially by type of gear used.

A total of 522 longline vessels landed sablefish in **1986**, up from 337 in **1985**. Average catch per vessel increased 1 t to 34 t (round weight) in 1986, and gross revenue per vessel was approximately \$48,500, up 7% from \$45,300

Table 4.--Alaska sablefish catch by gear type, 1985 and **1986**
(quantity and price based on round weight).

Gear	1985			1986		
	Quantity (t).	Value (\$1,000)	Price (\$/lb)	Quantity (t)	Value (\$1,000)	Price (\$/lb)
Longline	11,148	15,281	62.2	18,233	25,976	64.6
Pot	2,922	3,511	54.5	3,356	5,284	71.4
Trawl	608	532	39.7	4,945	4,214	38.6
Other	<u>55</u>	<u>66</u>	<u>54.4</u>	<u>--</u>	<u>--</u>	<u>--</u>
Total	14,733	19,391	59.7	26,534	35,475	60.6

Source: NMFS office of Pacific Marine Fisheries Commission,
Pacific Fishery Information Network, 7600 Sand Point Way N.E.,
BIN C15700, Seattle, WA **98115-0070**.

per vessel in 1985. The amount of sablefish caught by these vessels varied; the top 10% or 52 vessels harvested 48% of the catch and averaged **164 t**. In contrast, the bottom 10% of the longliners caught less than 1% of the longline-caught fish and averaged less than 1 t of sablefish. The number of vessels using pots declined from 23 in 1985 to **17** in **1986**. Average catch per vessel dropped from **160 t** to 146 t in **1986**, while average revenue per vessel jumped by 20% due to the increase in ex-vessel prices. The top four vessels utilizing pots captured 87% of the pot-caught sablefish in **1986**, and their catch averaged **540 t**. Average catch and revenue for trawlers increased over 300% as more trawlers targeted on sablefish. The average catch by trawlers fishing in **1986** rose to 106 t compared with an average of only 23 t in **1985**, and revenue per vessel increased to \$90,000, up 339% from the \$20,500 in **1985** (Appendix Table 3). The top four trawlers caught 74% of the trawlcaught sablefish and harvested an average 612 t. It should be noted that estimates of catch per vessel are based on fish ticket data which are not complete past October of **1986**, and the products of the average catch by vessel and the number of vessels by gear type are less than the total catch by gear type reported elsewhere in this report.

Number of Processors

There were a combined total of 138 at-sea and shore-based processors that caught or received groundfish in **1986**, and 93 recorded some amounts of sablefish. A total of 99,930 t of groundfish was received with 23,335 t of sablefish or nearly one-quarter of the total. Out of the 93 processors that handled sablefish, the top 9 (**10%**) received 52.6% of the sablefish (Appendix Table 6). This discussion is also based on fish ticket data that are not complete past October of **1986**.

Domestic Fishery off California, Oregon, and Washington

The domestic sablefish fishery off California, Oregon, and Washington totaled 13,202 t (round weight) in **1986** compared to 14,242 t **a year earlier** (Table 2). Landings in California increased by **19%** from **1985**, while the catches off both Oregon and Washington declined. The sablefish catch for the three states was 3% short of the **13,600 t** annual quota. During the year, several adjustments were made in the management of the fishery. First, the split between trawlers and fixed gear vessels was revised, and later trip limits were increased. On 22 August, federal regulations covering the sablefish fishery off California, Oregon, and Washington were changed to avoid an early closure of the fishery and to minimize discarding of fish. Of the remaining quota, the catch was split 55% to trawlers and 45% to fixed gear vessels. In addition, trawlers were limited to 8,000 lb of sablefish per trip. On 23 October, trip limits were increased to **12,000 lb** since trawl landings were lower than previously projected. The increase was expected to provide an opportunity to attain the trawl allocation. Also on 23 October, the fixed gear fishery was closed for the remainder of **1986**.

EXPORT MARKET FOR SABLEFISH IN 1986

Increased Alaska landings were reflected in increased exports of sablefish. U.S. exports in **1986** advanced **67% above a year earlier** to 12,085 t, product weight, valued at \$36 million from 7,223 t worth \$22 million in **1985** (Table 5). Ninety-eight percent of total exports were to Japan. There was a dramatic increase in direct shipments of sablefish from Alaska to Japanese markets in **1986**, but more is still shipped from Washington than from Alaska (Table 6). The average export **value** of **\$1.36** per pound was down slightly

Table 5. --U.S. exports of sablefish in **metric** tons* and dollars
by country of destination, 1985 and **1986**.

Country	1985		1986	
	t	Dollars	t	Dollars
Canada	15	47,337	15	29,903
United Kingdom	5	2,500	--	--
Singapore	1	1,500	--	--
Rep. of Korea	--	--	195	585,177
Hong Kong	--	--	1	2,000
Japan	<u>7,202</u>	<u>22,075,406</u>	<u>11,874</u>	<u>35,517,085</u>
Total	7,223	22,126,743	12,085	36,134,165

*Product weight.

Source : U.S. Dep. Commerce, Bureau of the Census, Washington,
D. C. 20233. Available from Richard Kinoshita, Northwest and
Alaska Fisheries Center, 7600 Sand Point Way N.E., BIN **C15700**,
Seattle, WA **98115-0070**.

Table 6.--U.S. exports of sablefish by customs district,
1985 and **1986** (in metric tons, product weight).

District	1985	1986
Northern California	113	221
Oregon	379	829
Washington	4,858	5,587
Alaska	<u>1,873</u>	<u>5,446</u>
Total	7,223	12,085*

* Includes 2 t from other customs districts.

Source: U.S. Dep. Commerce, Bureau of the Census, Washington,
D. C. 20233. Available from Richard Kinoshita, Northwest
and Alaska Fisheries Center, 7600 Sand Point Way N.E.,
BIN C15700, Seattle, WA **98115-0070**.

from the 1985 value of \$1.39 per pound. Sales in the Japanese market were doing well with prices in yen well below a year earlier.. The average value of the yen compared to the U.S. dollar increased 29% in 1986 from 1985. Wholesale prices on the Tokyo market for 5-7 lb, 4-5 lb, and 3-4 lb fish were respectively, 16, 20, and 28% lower than in 1985 when quoted in yen but increased when quoted in dollars (Table 7). Increased supplies of smaller fish resulted in a greater decline in price than that experienced for larger, fish. These factors contributed to increased purchases of 3-4 lb fish by processors and supermarkets. These groups predominately purchased 4-5 lb fish until **1986**.

U.S. HOLDINGS OF SABLEFISH

Available data on holdings of sablefish published in Frozen Fishery Products by NMFS indicated that in **1985** peak holdings were only 4% of total landings. There was a more erratic movement of holdings in **1986** than in **1985** when there was a gradual buildup from a low in February to a peak in August. In **1986**, holdings from a low in March increased and declined three times before peaking in September **1986** (Appendix Table 8).

DOMESTIC SABLEFISH HARVEST FOR **1987**

The four-state quota for sablefish in **1987** is approximately 40,295 t or 88.8 million pounds, up from the **1986** quota of 34,600 t. The fishery management councils established the quotas or domestic annual harvest (DAH) at below the total allowable catch (TAC) or optimum yield (OY). The quota for the Gulf of Alaska was set at 20,000 t. The Gulf quota was divided between the Eastern, Central, and Western Regulatory Areas with 8,200 t,

Table 7.--Tokyo wholesale price of sablefish by size of fish, annual average, 1985 and 1986

Year	5-7 lb		4-5 lb		3-4 lb	
	S/lb	y/kg	S/lb	y/kg	S/lb	y/kg
1985	2.27	1195	2.12	1117	2.00	1054
1986	2.68	1005	2.39	895	2.01	754

Note: Average exchange rate for **1985** - 239 yen per dollar and **1986** - 170 yen per dollar.

Source: Foreign Fishery Information Release, Natl. Mar. Fish. Serv., 300 S. Ferry St., Terminal Isl., CA **90731**.

8,800 t, and 3,000 t, respectively. The DAH for the Bering Sea was established at 3,495 t, and at 3,400 t for the Aleutian Islands. The quota for the fisheries off California, Oregon, and Washington was set at 13,400 t, down slightly from the 13,600 t quota in 1986. The quota was split 52% to trawlers and 48% to fixed gear vessels.

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Appendix Table 1. --Alaska catch of sablefish in the domestic fishery, by month and gear, 1985-86 (in metric tons, round weight).

Month	Longline	Pot	Trawl	Total*
1985				
January	152	--	84	236
February	471	84	--	556
March	1,144	102	65	1,310
April	2,201	356	96	2,653
May	2,914	424	149	3,492
June	1,272	585	5	1,911
July	778	448	20	1,247
August	600	121	3	724
September	586	131	46	763
October	937	360	10	1,307
November	92	--	16	108
December	--	309	114	424
Total	11,148	2,922	608	14,733
1986				
January	139	74	565	788
February	264	86	475	825
March	511	514	147	1,172
April	8,341	657	1,159	10,157
May	4,494	642	504	5,640
June	1,142	437	331	1,910
July	515	199	352	1,066
August	691	338	513	1,542
September	1,865	169	475	2,509
October	152	130	167	448
November	119	87	86	292
December	--	23	171	194
Total	18,233	3,356	4,945	26,534

*Includes 55 t of sablefish in 1985 caught by other gear.

Source: **Data** from NMFS office of the Pacific Marine Fisheries Commission, Pacific Fishery Information Network, 7600 Sand Point Way N.E., Seattle, WA **98115-0070**, **4/1/87**.

Appendix Table 2.--**Domestic** ex-vessel prices of Alaska
sablefish by month and gear, **1985-86**
(cents per pound, round weight).

Month	Longline	Pot	Trawl	Total
1985				
January	61.8	--	16.6	45.8
February	58.1	75.7	--	60.8
March	56.2	87.8	15.7	56.7
April	59.7	59.1	51.5	59.4
May	65.5	58.6	58.4	64.4
June	66.3	55.9	39.0	62.7
July	56.2	48.8	11.0	52.8
August	50.7	44.2	28.9	49.5
September	64.6	44.3	39.2	59.6
October	74.2	41.9	39.4	65.0
November	41.8	--	54.5	43.7
December	--	55.4	39.4	50.9
Weighted average	62.2	54.5	39.7	59.7
1986				
January	47.6	53.2	39.9	42.5
February	50.1	47.5	49.9	49.7
March	55.7	55.6	36.7	53.3
April	63.7	58.9	39.5	60.7
May	63.3	61.4	39.4	60.9
June	57.6	66.1	36.7	55.9
July	52.2	69.1	36.0	50.0
August	58.5	93.2	30.6	56.8
September	85.1	121.8	34.7	78.0
October	76.9	128.5	40.7	78.4
November	89.4	127.4	38.6	85.0
December	--	117.4	39.5	48.6
Weighted average	64.6	71.4	38.6	60.6

Source: Data from NMFS office of the Pacific Marine Fisheries
Commission, Pacific Fishery Information Network, 7600 Sand
Point Way N.E., BIN **C15700**, **Seattle**, WA **98115-0070**.

Appendix Table 3.--Average catch and revenue per domestic vessel in the Alaska sablefish fishery by gear, 1985 and **1986**.

Gear	1985			1986		
	Vessels (number)	Catch (t)	Revenue (dollars)	Vessels (number)	Catch (t)	Revenue (dollars)
Longline	337	33	45,300	522	34	48,500
Pot	23	160	192,000	17	146	230,300
Trawl	26	23	20,500	31	106	90,000

Source: Based on data from Alaska **Commercial** Fisheries Entry Commission Pouch KB, Juneau, AK **99811** and NMFS office of the Pacific Marine Fisheries Commission, Pacific Fishery Information Network, 7600 Sand Point Way N.E., BIN **C15700**, Seattle, WA **98115-0070**.

Appendix Table 4.--Sablefish catch in Alaskan waters by fleet, **1981-86** (in metric tons, round weight).

Year	Domestic	Joint venture	Domestic incl. JV	Foreign	Total
1981	1,942	180	2,122	10,931	13,054
1982	3,085	124	3,209	9,484	12,694
1983	3,852	389	4,241	8,144	12,385
1984	9,930	876	10,806	3,029	13,836
1985	14,733	335	15,069	350	15,419
1986	26,534	476	27,010	108	27,118

Source: Data from NMFS office of Pacific Marine Fisheries Commission, Pacific Fishery Information Network, 7600 Sand Point Way N.E., BIN C15700, Seattle, WA **98115-0070**.

Appendix Table 5.--Total Alaska, groundfish catch by domestic vessels by species and gear, 1985-86 (in metric tons, round weight).

Species	Longline		Pot		Trawl	
	1985	1986	1985	1986	1985	1986
Flounders	57	155	0	7	484	8,509
Pacific cod	424	809	2	140	48,777	41,405
Pollock	802	132	--	114	45,332	57,982
Rockfish	872	1,033	1	3	2,782	6,616
Sablefish	11,147	18,232	2,922	3,356	616	4,946
Other	89	114	20	--	275	679
Total	13,391	20,475	2,945	3,620	98,266	120,137
Pct. sablefish of total catch	83.2	89.0	99.2	92.7	0.6	4.1

Source: NMFS office of Pacific Marine Fisheries Commission, Pacific Fishery Information Network, 7600 Sand Point Way N.E., BIN C15700, Seattle, WA **98115-0070**.

Appendix Table 6.--Distribution of sablefish catch received by at-sea and shore-based processors, **1986**.

Group number	No. in group	Quantity in t	Percent
1	10	3	0
2	10	36	.2
3	10	171	.7
4	9	229	1.0
5	9	469	2.0
6	9	871	3.7
7	9	1,349	5.8
8	9	2,757	11.8
9	9	5,167	22.2
10	9	<u>12,283</u>	<u>52.6</u>
Total	93	23,335	100.0

Note: 1986 data through October **1986 only**.

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK **99811**.

Appendix Table 7. --Tokyo wholesale price of sablefish by size of fish and month, 1984-86 (in dollars per pound, dressed weight).

Month	5-7 lb	4-5 lb	3-4 lb
1984			
January	1.36	1.11	0.97
February	1.43	1.21	1.00
March	1.65	1.50	1.28
April	1.63	1.49	1.28
May	1.62	1.49	1.28
June	1.58	1.50	1.30
July	1.52	1.46	1.26
August	1.53	1.48	1.24
September	1.65	1.61	1.48
October	1.71	1.62	1.46
November	1.80	1.71	1.62
December	1.86	1.80	1.75
Average	1.61	1.50	1.33
1985			
January	1.90	1.80	1.74
February	2.01	1.91	1.84
March	2.12	2.02	1.94
April	2.27	2.15	2.04
May	2.27	2.14	2.05
June	2.27	2.16	2.10
July	2.36	2.22	2.14
August	2.18	2.02	1.94
September	2.19	2.02	1.88
October	2.48	2.32	2.14
November	2.58	2.38	2.12
December	2.62	2.32	2.02
Average	2.27	2.12	2.00
1986			
January	2.54	2.32	2.05
February	2.75	2.50	2.18
March	2.92	2.65	2.04
April	2.78	2.49	1.94
May	2.85	2.58	1.99
June	2.69	2.41	1.86
July	2.53	2.24	1.73
August	2.62	2.27	1.88
September	2.60	2.27	2.02
October	2.69	2.38	2.20
November	2.59	2.31	2.14
December	2.59	2.31	2.14
Average	2.68	2.39	2.01

Source: Foreign Fishery Information Release, 1984-86, Natl. Mar. Fish. Serv., 300 S. Ferry St., Terminal Isl., CA **90731.**

Appendix Table 8. --U.S. cold storage holdings of sablefish
by month, end of month, **1982-86** (in
1,000 pounds, product weight).

Month	1982	1983	1984	1985	1986
January	655	1,147	1,480	158	717
February	465	972	1,021	76	507
March	566	1,045	542	84	240
April	444	1,020	608	370	1,021
May	1,189	912	578	573	609
June	427	1,751	613	672	1,152
July	887	1,049	1,219	1,046	769
August	1,067	1,733	1,154	1,864	611
September	1,870	1,702	1,105	1,791	1,826
October	1,820	2,335	394	1,644	1,135
November	1,592	2,034	418	1,005	522
December	1,420	1,626	259	817	396

Source: Frozen Fishery Products, **1982-86**, Natl. Mar. Fish.
Serv., Natl. Fish. Stat. Prog., Washington, D.C. **20235.**